In further response to the January 17, 2001 Official Action, kindly amend the above-identified application as follows:

IN THE CLAIMS:

Please cancel Claims 12 and 28 without prejudice and without disclaimer of subject matter.

Please amend Claims 1, 2, 4, 6, 8, 10, 14, 16, 18, 20, 22, 24, 26, 30, 32 and 34 to read as follows. A marked-up version of those claims, showing the changes made thereto, is attached.

1. (Amended) An image pickup device comprising:

a color filter array that includes color filters arranged in horizontal and vertical directions;

and an image pickup element for picking up an image of an object through said color filter array, wherein

said color filter array comprises color filter groups of a plurality of units, in which each unit comprises first to eighth color filter groups and each color filter group represents a column comprises an array of the color filters,

the first color filter group comprises an alternate array of first and second color filters,

the second color filter group comprises an alternate array of third and fourth color filters,

the third color filter group comprises an alternate array of the second and first color filters,

the fourth color filter group comprises an alternate array of the fourth and third color filters,

the fifth color filter group is arranged in a same manner as the third color filter group,

the sixth color filter group is arranged in a same manner as the second color filter group,

the seventh color filter group is arranged in a same manner as the first color filter group, and

the eighth color filter group is arranged in a same manner as the fourth color filter group.

2. (Amended) An image pickup device according to claim 1, wherein the first to fourth color filters are of yellow, cyan, magenta and green.

4. (Twice Amended) An image pickup device comprising an image pickup element for picking up an image of an object, said image pickup device comprising:

a color filter array that includes color filters arranged in horizontal and vertical directions, through which an image of an object is picked up by the image pickup element;

a plurality of pixels constituting photoelectric converting elements arranged in the horizontal and vertical directions, respectively corresponding to the color filters;

a plurality of vertical charge transfer units provided respectively corresponding to columns of the plurality of pixels in the vertical direction, for transferring electric charges from the plurality of pixels in the vertical direction;

a horizontal charge transfer unit connected to ends of said plurality of vertical charge transfer units, for transferring the electric charges, transferred from said plurality of vertical charge transfer units, in the horizontal direction;

an output unit for converting the electrical charges transferred from said horizontal charge transfer unit into an image signal and outputting the image signal, wherein

said color filter array comprises an array, in the vertical direction, of a plurality of units of color filter groups, with each unit comprised of 8 rows in which an odd-numbered row includes an alternate array of a first color filter and a second color filter in a predetermined order while an even-numbered row includes an alternate array of a third color filter and a fourth color filter in a predetermined order, and

an image signal corresponding to one row, within an image signal obtained from the image pickup element in a single image pickup operation, is outputted as a line-sequential color difference signal of pixels of 4 rows in the vertical direction, wherein:

a color filter at a (4n+1)th row and an odd-numbered column is same as a color filter at a (4n+3)th row and an even-numbered column,

a color filter at a (4n+2)th row and an odd-numbered column is same as a color filter at a (4n+4)th row and an even-numbered column,

a color filter at a (4n+1)th row and an even-numbered column is same as a color filter at a (4n+3)th row and an odd-numbered column,

a color filter at a (4n+2)th row and an even-numbered column is same as a color filter at a (4n+4)th row and an odd-numbered column, and

n is an integer equal to or larger than 0.

6. (Amended) An image pickup device according to claim 4, wherein signal charges of two predetermined pixels that are mutually adjacent in the vertical direction, among said plurality of pixels corresponding to the color filters, are added and an image signal corresponding to the added signal charges is outputted from said output unit.

8. (Amended) An image pickup device according to claim 6, wherein the added signal charges of the two predetermined pixels are further added with signal charges of two predetermined pixels that are present in a direction diagonal to the first-mentioned two predetermined pixels in a column adjacent to that of the first-mentioned two predetermined pixels, and

an image signal corresponding to the added signal charges of the four predetermined pixels is outputted from said output unit.

10. (Amended) An image pickup device according to claim 8, wherein an image signal corresponding to the signal charges is outputted from said output unit by combining a method of adding signal charges in the vertical direction and in the diagonal direction and a method of further adding, to the signal charges added in the vertical direction, signal charges in the vertical direction.

12. (Canceled)

14. (Amended) An image pickup device according to claim 6, wherein color filters corresponding to the two predetermined pixels are a combination of cyan and green and a combination of yellow and magenta, or a combination of yellow and green and a combination of cyan and magenta.

c4

16. (Amended) An image pickup device according to claim 8, wherein color filters corresponding to the two predetermined pixels are a combination of cyan and green and a combination of yellow and magenta, or a combination of yellow and green and a combination of cyan and magenta.

c7

18. (Amended) An image pickup device according to claim 10, wherein color filters corresponding to the two predetermined pixels are a combination of cyan and green and a combination of yellow and magenta, or a combination of yellow and green and a combination of cyan and magenta.

c8

20. (Amended) An image pickup device according to claim 4, wherein the image pickup element comprises a plurality of electrodes, each of which is connected commonly to every fourth pixel in the vertical direction, and which are adapted to control read-out of signal charges from the plurality of pixels to said vertical charge transfer units and to control transfer of the signal charges from said vertical charge transfer units to said horizontal charge transfer unit.

c9

22. (Amended) An image pickup device according to claim 6, wherein

c10

the image pickup element comprises a plurality of electrodes, each of which is connected commonly to every fourth pixel in the vertical direction, and which are adapted to control read-out of signal charges from the plurality of pixels to said vertical charge transfer units and to control transfer of the signal charges from said vertical charge transfer units to said horizontal charge transfer unit.

24. (Amended) An image pickup device according to claim 8, wherein the image pickup element comprises a plurality of electrodes, each of which is connected commonly to every fourth pixel in the vertical direction, and which are adapted to control read-out of signal charges from the plurality of pixels to said vertical charge transfer units and to control transfer of the signal charges from said vertical charge transfer units to said horizontal charge transfer unit.

26. (Amended) An image pickup device according to claim 10, wherein the image pickup element comprises a plurality of electrodes, each of which is connected commonly to every fourth pixel in the vertical direction, and which are adapted to control read-out of signal charges from the plurality of pixels to said vertical charge transfer units and to control transfer of the signal charges from said vertical charge transfer units to said horizontal charge transfer unit.

28. (Canceled)

30. (Amended) An image pickup device according to claim 14, wherein

the image pickup element comprises a plurality of electrodes, each of which is connected commonly to every fourth pixel in the vertical direction, and which are adapted to control read-out of signal charges from the plurality of pixels to said vertical charge transfer units and to control transfer of the signal charges from said vertical charge transfer units to said horizontal charge transfer unit.

c13 comp

32. (Amended) An image pickup device according to claim 16, wherein the image pickup element comprises a plurality of electrodes, each of which is connected commonly to every fourth pixel in the vertical direction, and which are adapted to control read-out of signal charges from the plurality of pixels to said vertical charge transfer units and to control transfer of the signal charges from said vertical charge transfer units to said horizontal charge transfer unit.

c14

34. (Amended) An image pickup device according to claim 18, wherein the image pickup element comprises a plurality of electrodes, each of which is connected commonly to every fourth pixel in the vertical direction, and which are adapted to control read-out of signal charges from said pixels to said vertical charge transfer units and to control transfer of the signal charges from said vertical charge transfer units to said horizontal charge transfer unit.

c16

REMARKS

Claims 1-10, 13-26 and 29-36 are pending, with Claims 1, 3 and 4 being in independent form.